

IN THE CLAIMS:

1. (Amended) A protein profiling system for identifying a protein biomarker characteristic of a tumor cell, comprising:

a protein fractionation unit that separates a protein content of a at least two tissue or specimen ~~sample~~ samples from a respective subject into a plurality of protein subgroups, wherein at least one of said samples contains only normal cells and at least one of said samples contains at least one tumor cell;

a mass spectrometer that independently performs mass spectroscopy on each of the said plurality of protein subgroups from ~~the respective~~ said subject's ~~sample~~ samples, and outputs respective mass spectra subgroup data for each;

a protein data processing unit that ^{combin} analyzes the said mass spectra subgroup data to create a protein profile for ~~the~~ each of said tissue or specimen ~~sample~~ samples, and identifies at least one protein ~~patterns associated with subject characteristics~~ biomarker characteristic of said tumor cell based on ~~the~~ a comparison of said protein profile ~~and information received on the respective subjects of said sample containing at least one tumor cell with said protein profile of said sample containing only normal cells; and~~

a database that stores the said protein profile and the said identified protein ~~patterns~~ biomarker characteristic of said tumor cell.

2-4. (Cancelled)

5. (Amended) The system of claim 1, wherein the protein data processing unit uses a an artificial neural network to identify ~~the~~ said protein ~~patterns associated with subject~~ characteristics biomarkers.

6. (Amended) The system of claim 1, wherein the protein data processing unit uses a peak analysis techniques to identify ~~the protein patterns associated with subject~~ characteristics biomarkers.

7-10. (Cancelled)

11. (Amended) The ~~method~~ system of claim ~~10~~ 1, wherein said protein profile comprises a comprehensive protein profile.

12-17. (Cancelled)

18. (Amended) A protein biomarker identified by the ~~method~~ system of claim ~~17~~ 1.

19. (Cancelled)